Fig.1

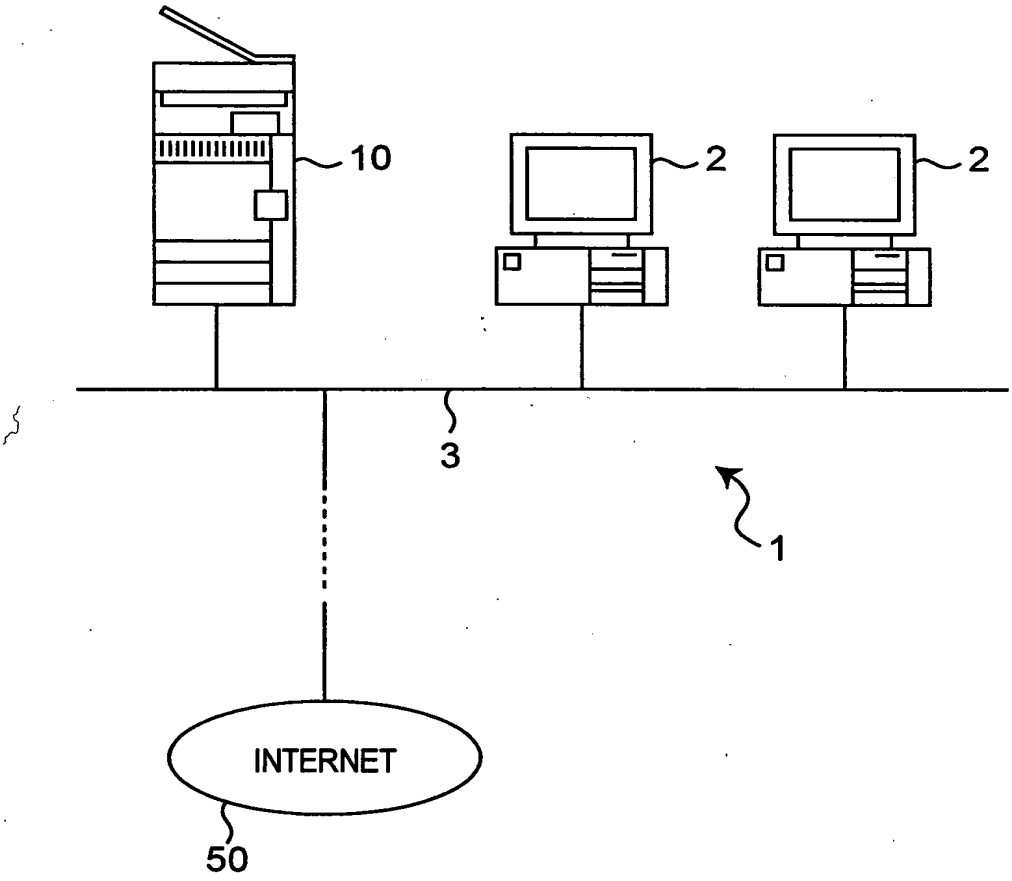


Fig.2

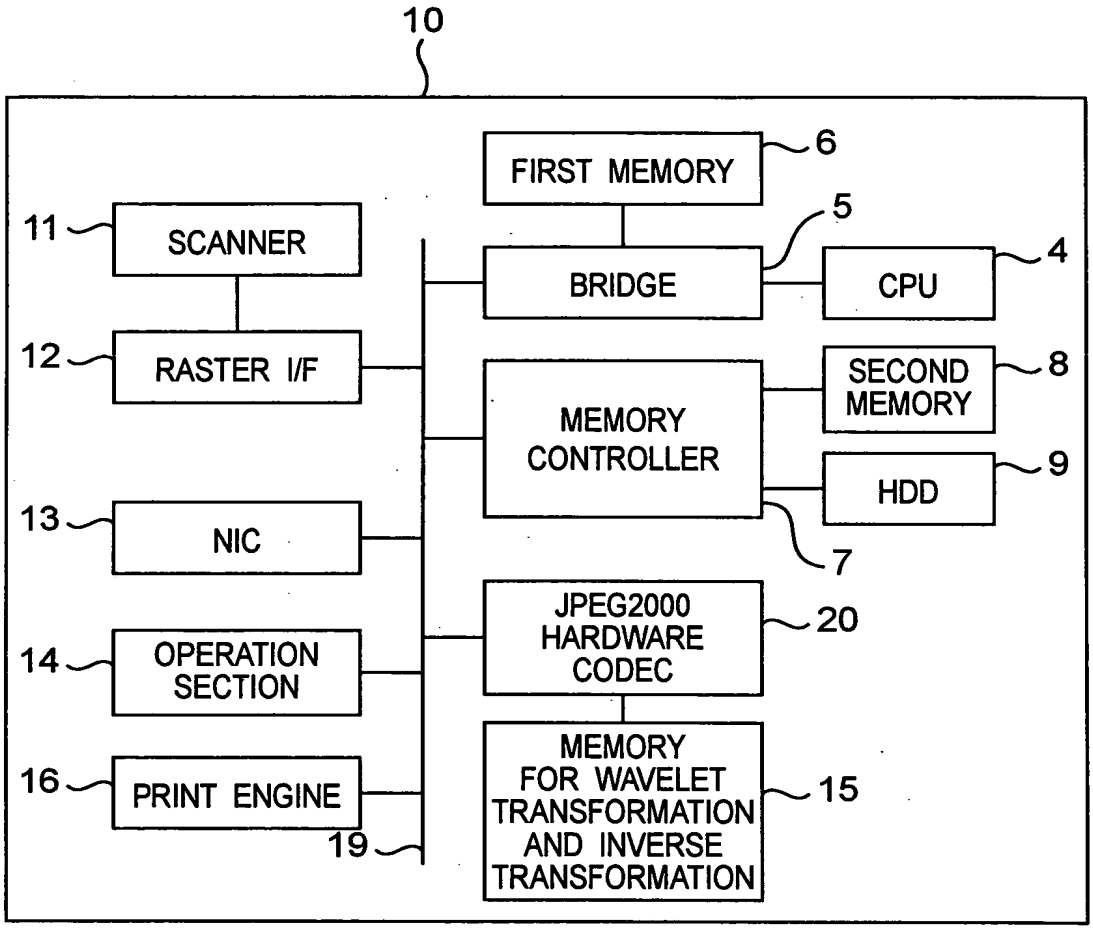

10
FIRST MEMORY
6
11
SCANNER
5
BRIDGE
CPU
4
12
RASTER I/F
SECOND MEMORY
8
MEMORY CONTROLLER
HDD
9
13
NIC
7
JPEG2000 HARDWARE CODEC
20
14
OPERATION SECTION
MEMORY FOR WAVELET TRANSFORMATION AND INVERSE TRANSFORMATION
15
16
PRINT ENGINE
19

Fig.3B

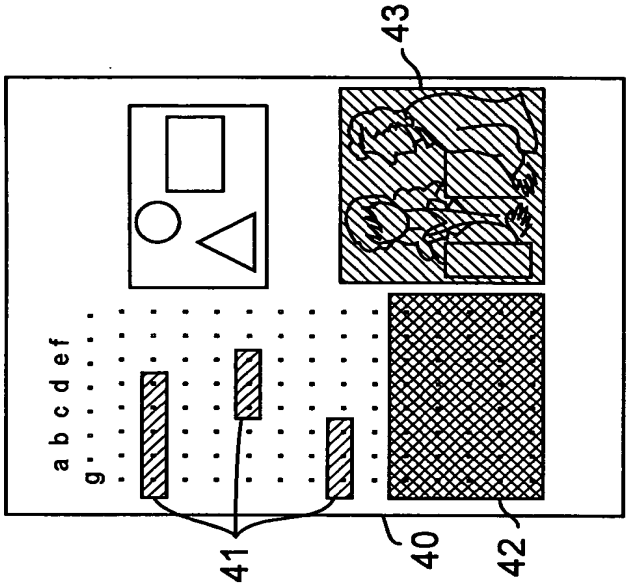


Fig.3A

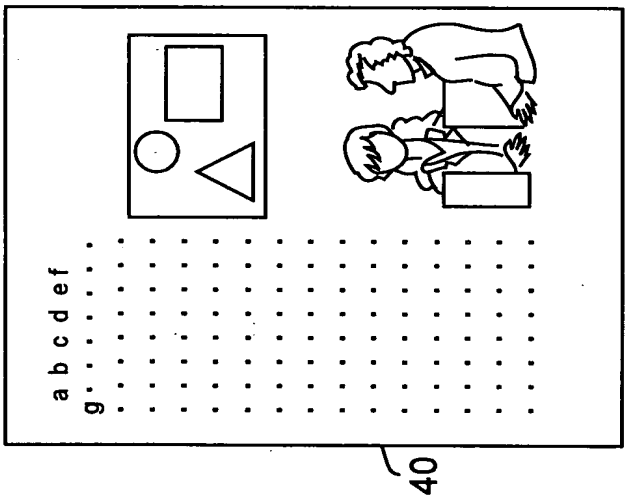


Fig.4C

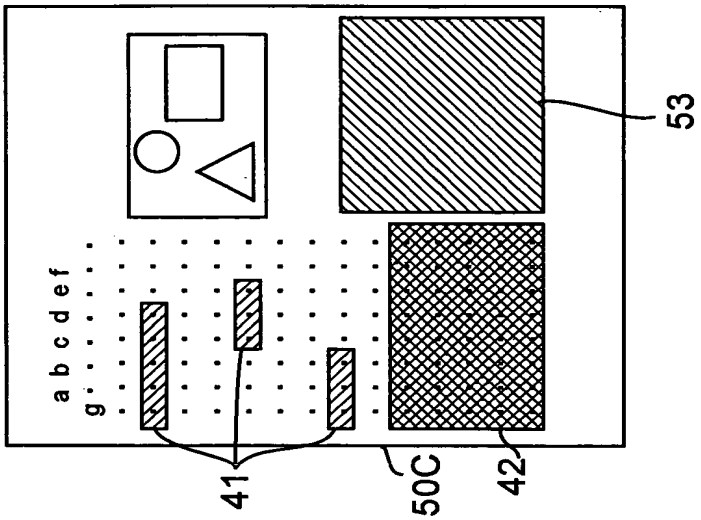


Fig.4B

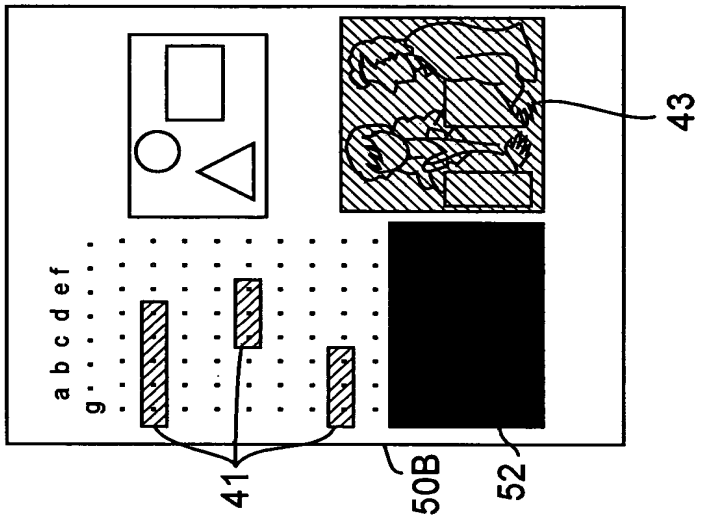


Fig.4A

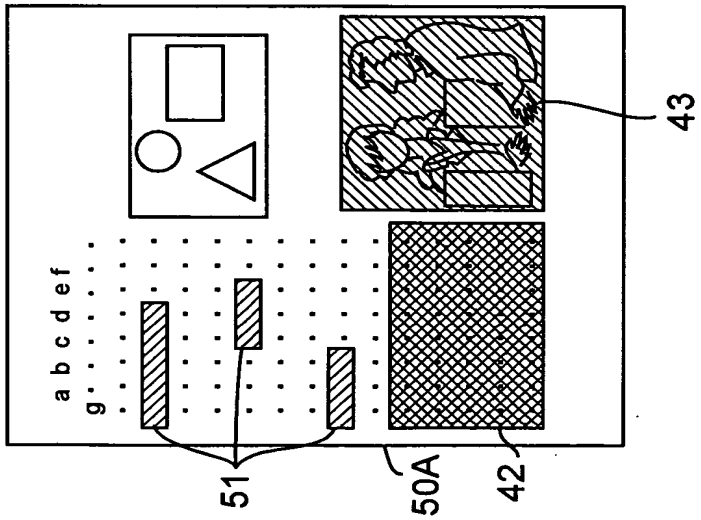


Fig.5

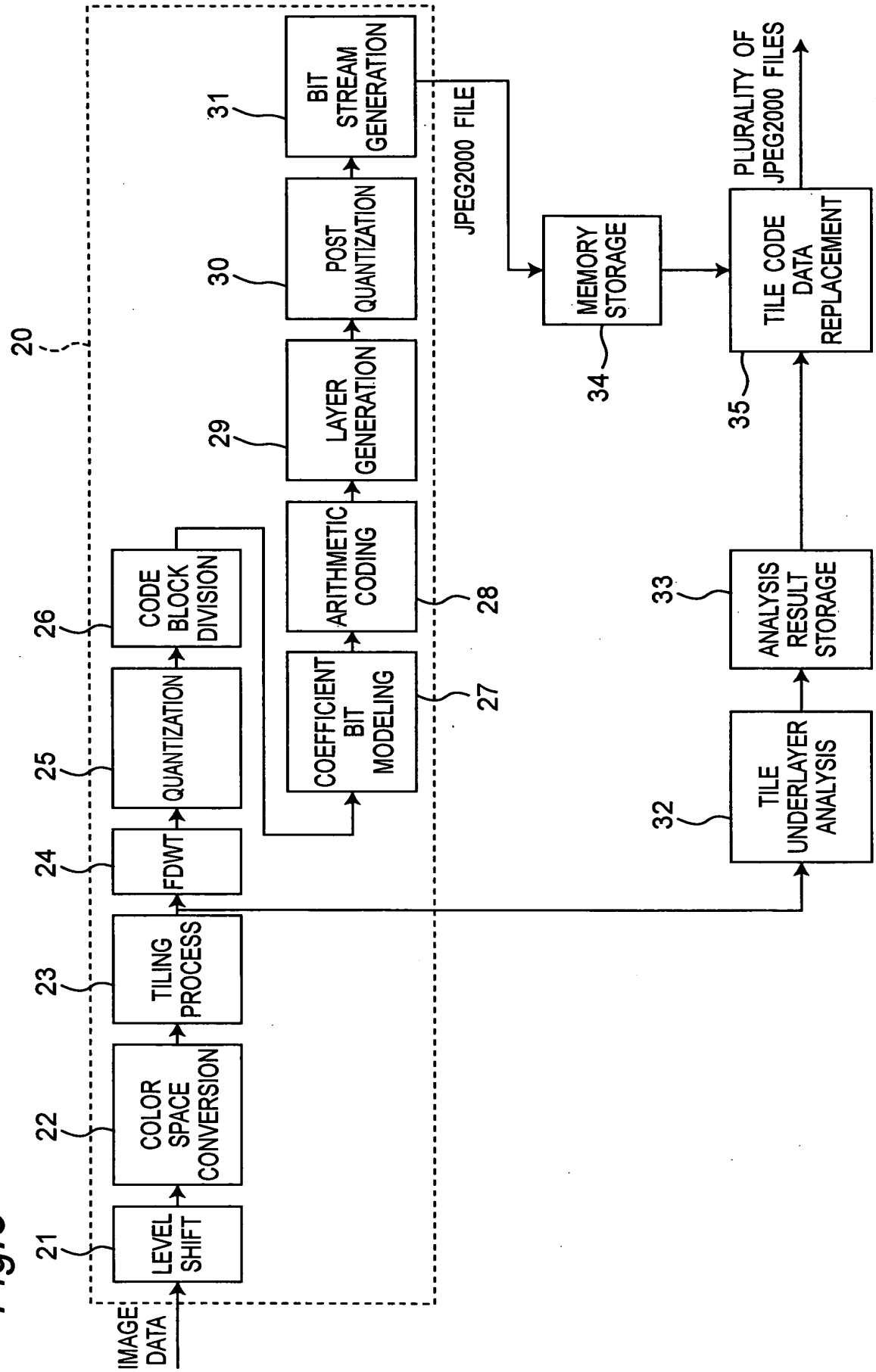


IMAGE DATA
20
21
LEVEL SHIFT
22
COLOR SPACE CONVERSION
23
TILING PROCESS
24
FDWT
25
QUANTIZATION
26
CODE BLOCK DIVISION
27
COEFFICIENT BIT MODELING
28
ARITHMETIC CODING
29
LAYER GENERATION
30
POST QUANTIZATION
31
BIT STREAM GENERATION
JPEG2000 FILE
34
MEMORY STORAGE
35
TILE CODE DATA REPLACEMENT
PLURALITY OF JPEG2000 FILES
32
TILE UNDERLAYER ANALYSIS
33
ANALYSIS RESULT STORAGE

Fig.6

		R	G	B		Y	Cb	Cr
MARKER COLOR	RED	255	173	230		186.166	14.66077	54.98532
	BLUE	83	246	255		192.479	32.00379	−61.5791
	YELLOW	234	254	158		220.696	−44.6275	10.57143
	GREEN	169	255	143		204.688	−41.4901	−22.3473

Fig.7

TILE	ANALYSIS RESULT
T0	
T1	
T2	
T3	RED
⋮	
T100	
T101	YELLOW
T102	YELLOW
T103	YELLOW
⋮	
T200	BLUE
T201	BLUE
T202	BLUE
T203	
⋮	

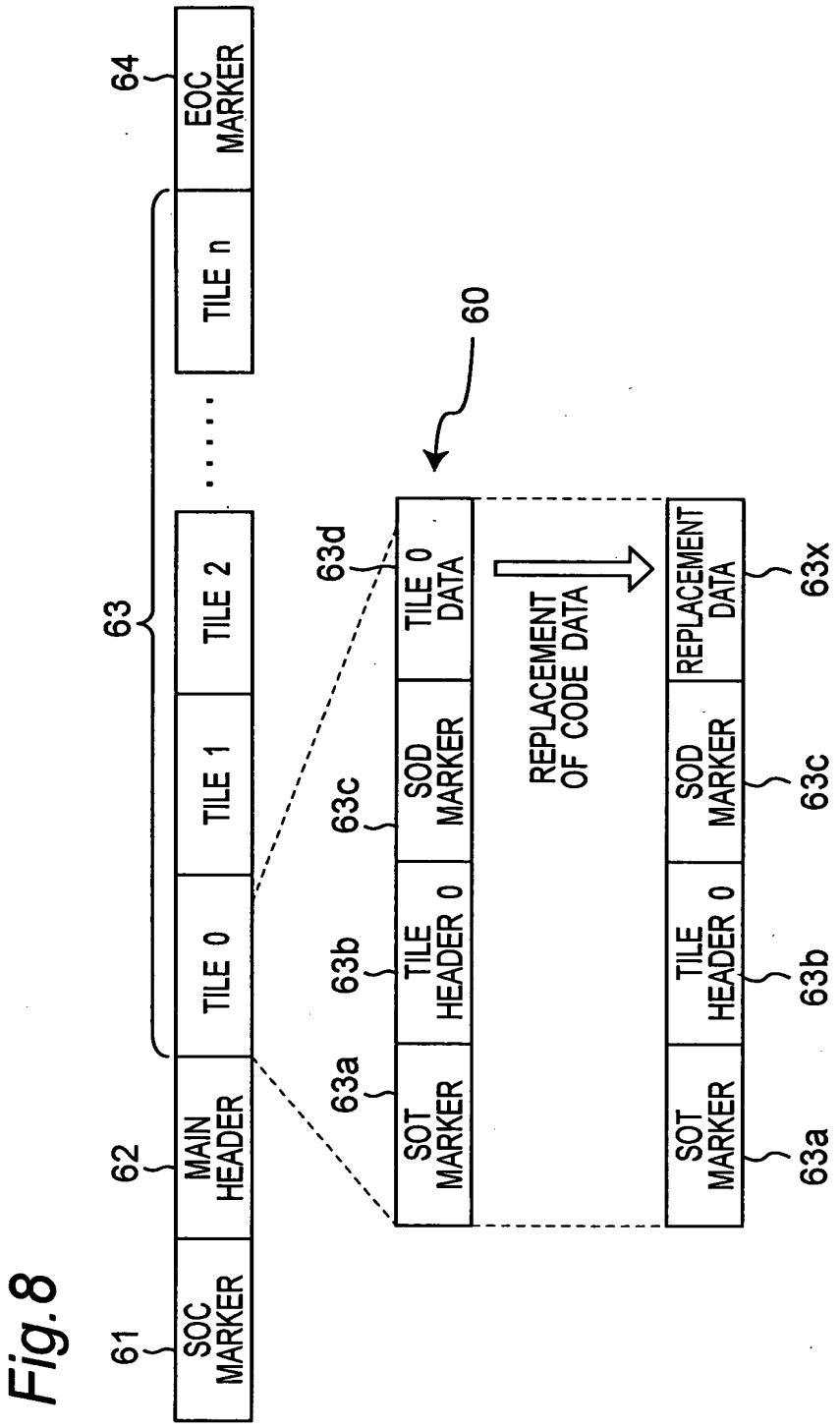

61
SOC MARKER
62
MAIN HEADER
63
TILE 0
TILE 1
TILE 2
TILE n
64
EOC MARKER
60
63a
SOT MARKER
63b
TILE HEADER 0
63c
SOD MARKER
63d
TILE 0 DATA
REPLACEMENT OF CODE DATA
63x
REPLACEMENT DATA

Fig.8

Fig.9

MARKER COLOR	DESTINATION	REPLACEMENT COLOR
RED	A	RED(0)
YELLOW	B	BLACK(1)
BLUE	C	BLUE(2)
⋮	⋮	⋮

Fig.10

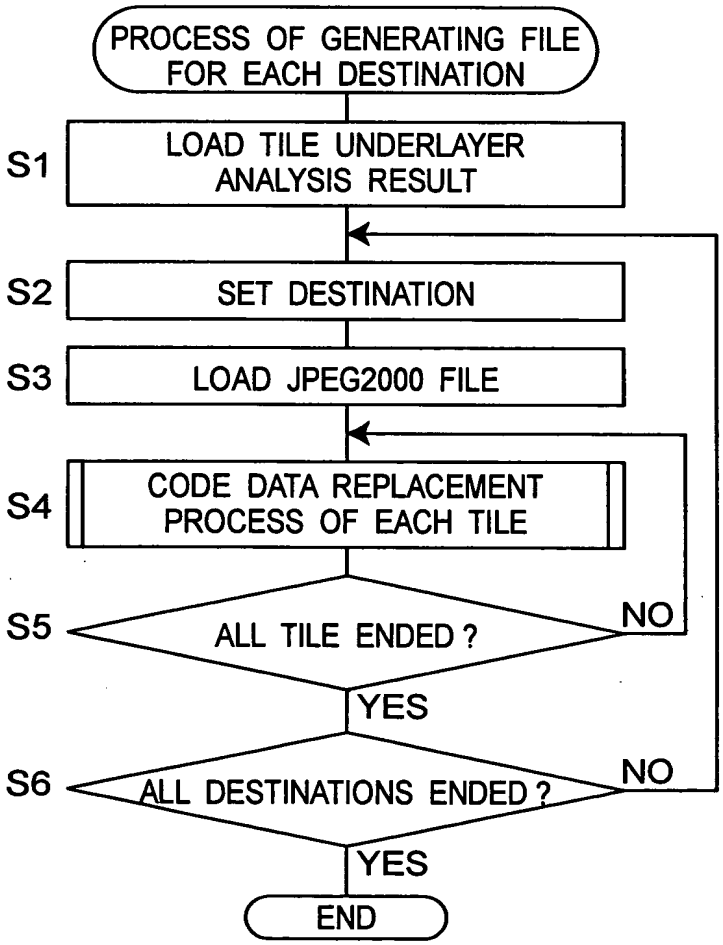


Fig. 11

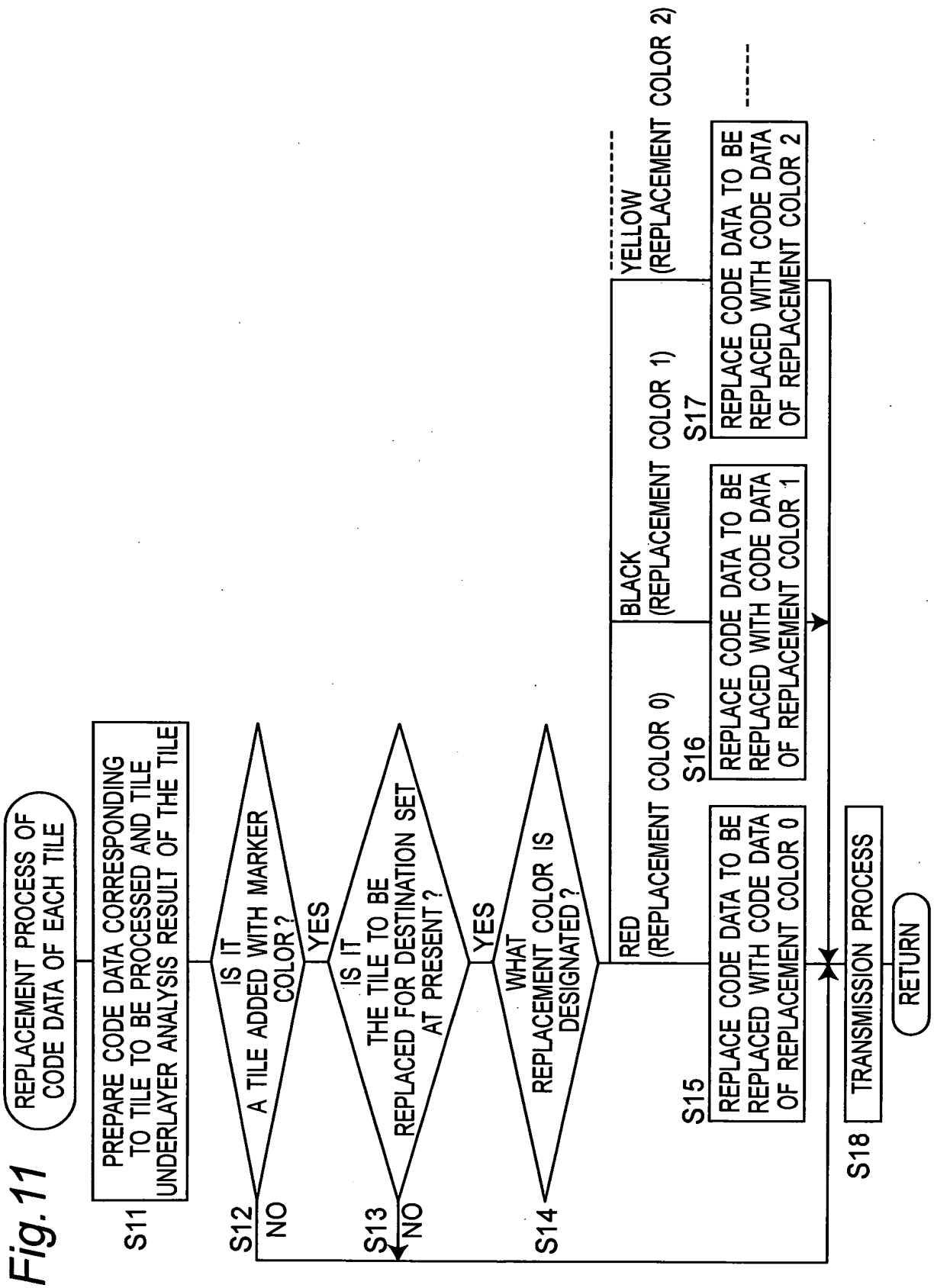

REPLACEMENT PROCESS OF CODE DATA OF EACH TILE
S11
PREPARE CODE DATA CORRESPONDING TO TILE TO BE PROCESSED AND TILE UNDERLAYER ANALYSIS RESULT OF THE TILE
S12
IS IT A TILE ADDED WITH MARKER COLOR?
NO
YES
S13
IS IT THE TILE TO BE REPLACED FOR DESTINATION SET AT PRESENT?
NO
YES
S14
WHAT REPLACEMENT COLOR IS DESIGNATED?
RED (REPLACEMENT COLOR 0)
BLACK (REPLACEMENT COLOR 1)
YELLOW (REPLACEMENT COLOR 2)
S15
REPLACE CODE DATA TO BE REPLACED WITH CODE DATA OF REPLACEMENT COLOR 0
S16
REPLACE CODE DATA TO BE REPLACED WITH CODE DATA OF REPLACEMENT COLOR 1
S17
REPLACE CODE DATA TO BE REPLACED WITH CODE DATA OF REPLACEMENT COLOR 2
S18
TRANSMISSION PROCESS
RETURN

Fig. 12A

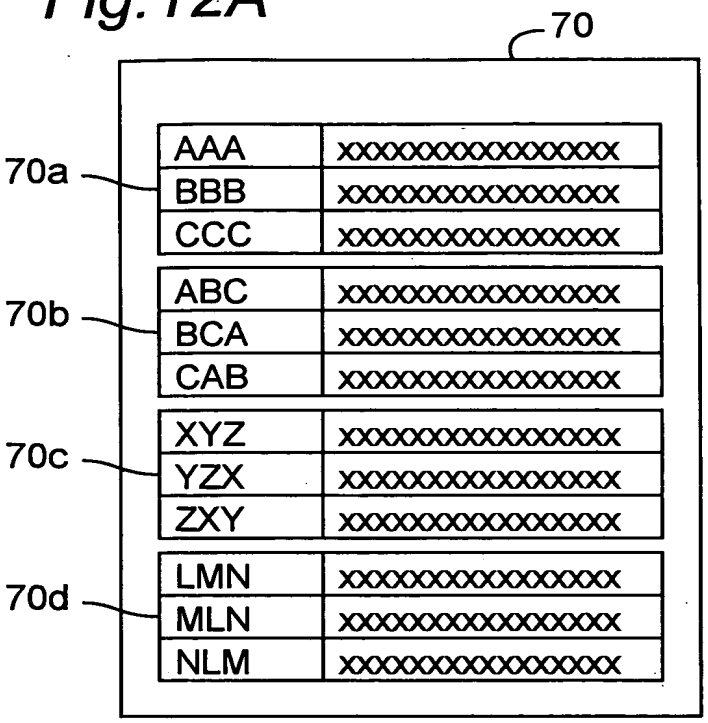


Fig. 12B

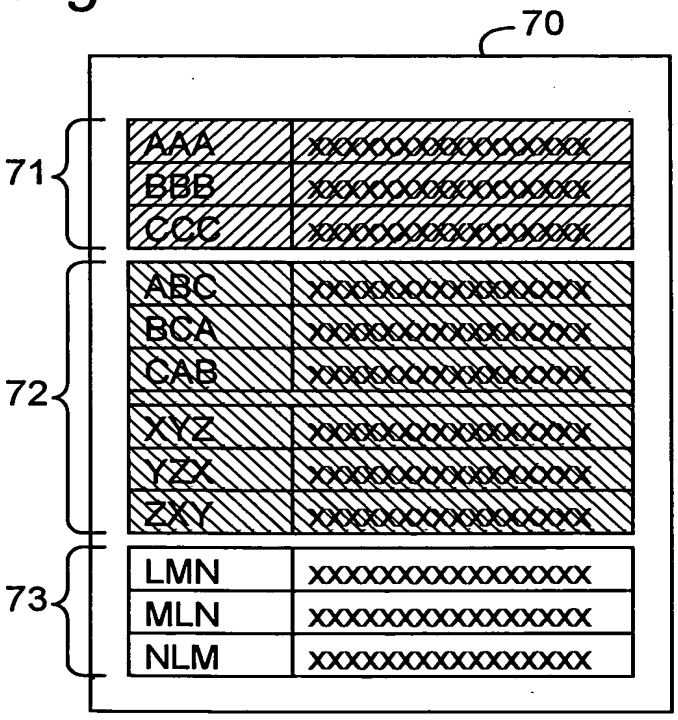


Fig.13A

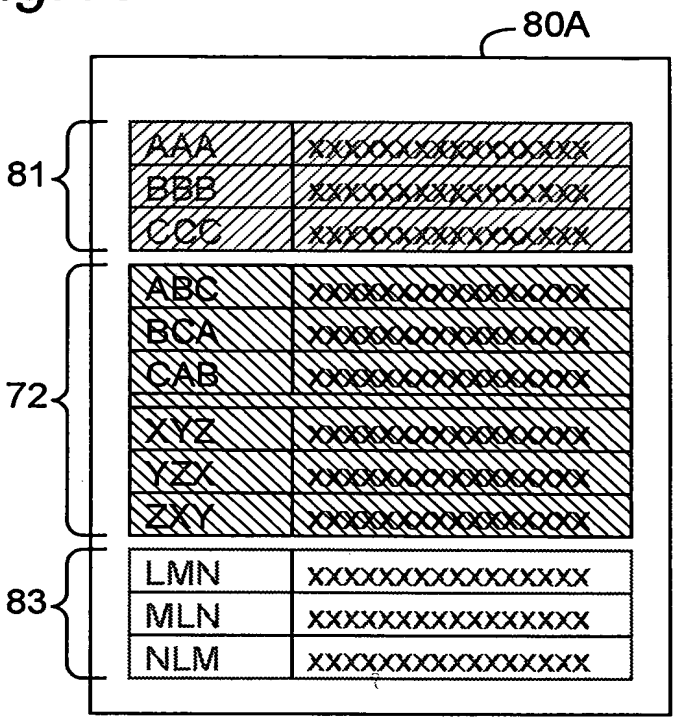
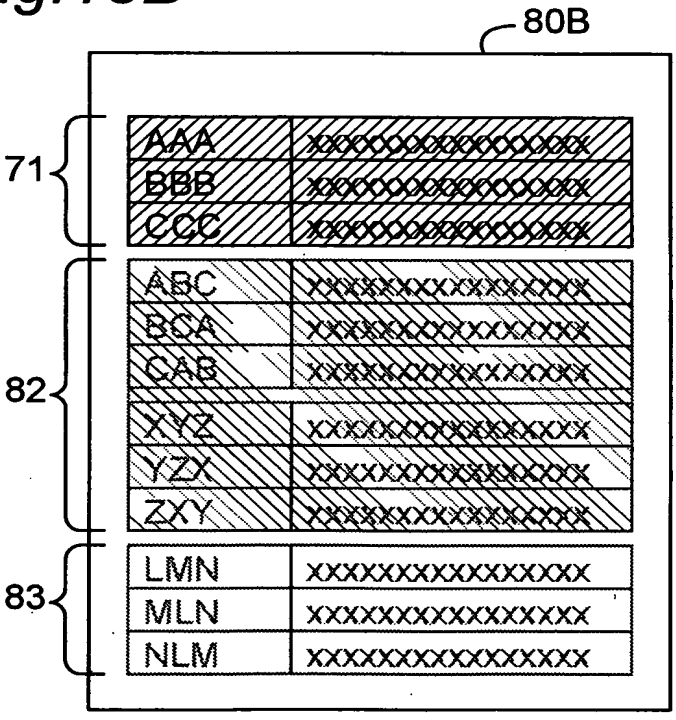


Fig.13B



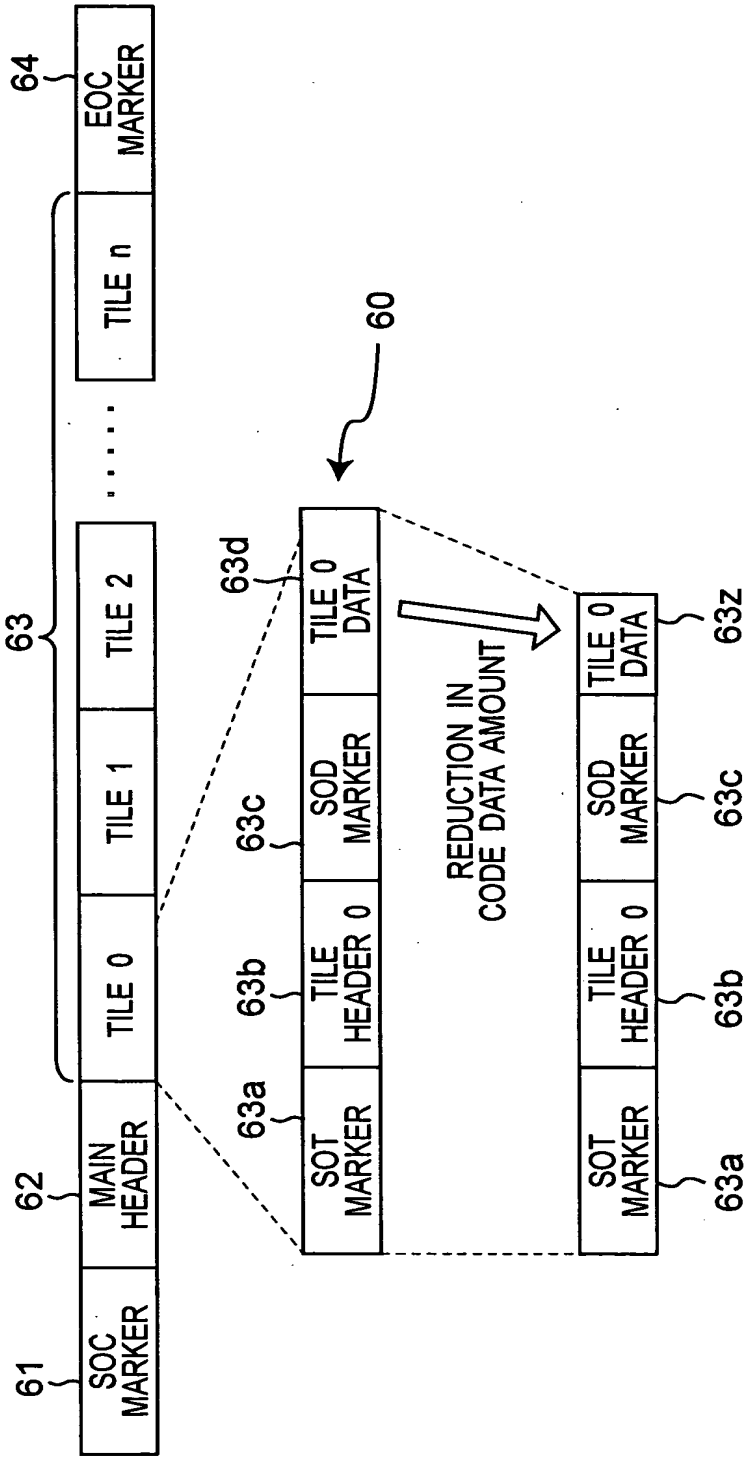

61
SOC MARKER
62
MAIN HEADER
63
TILE 0
TILE 1
TILE 2
TILE n
64
EOC MARKER
60
63a
SOT MARKER
63b
TILE HEADER 0
63c
SOD MARKER
63d
TILE 0 DATA
REDUCTION IN CODE DATA AMOUNT
63z

Fig.14

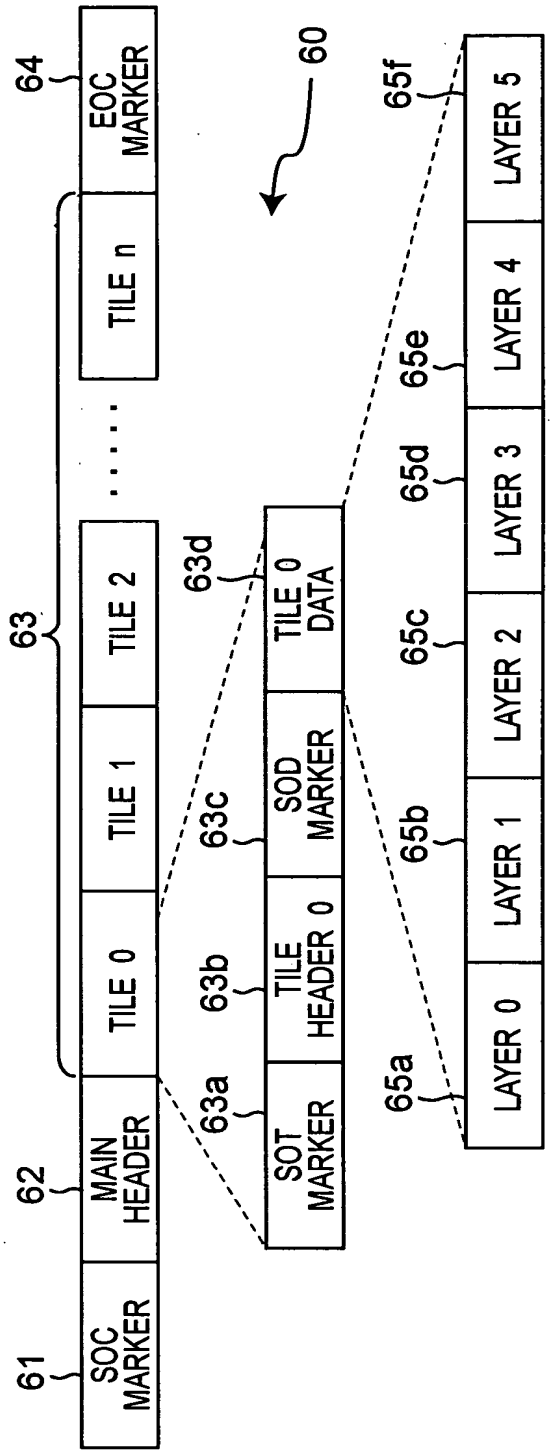


Fig.15A

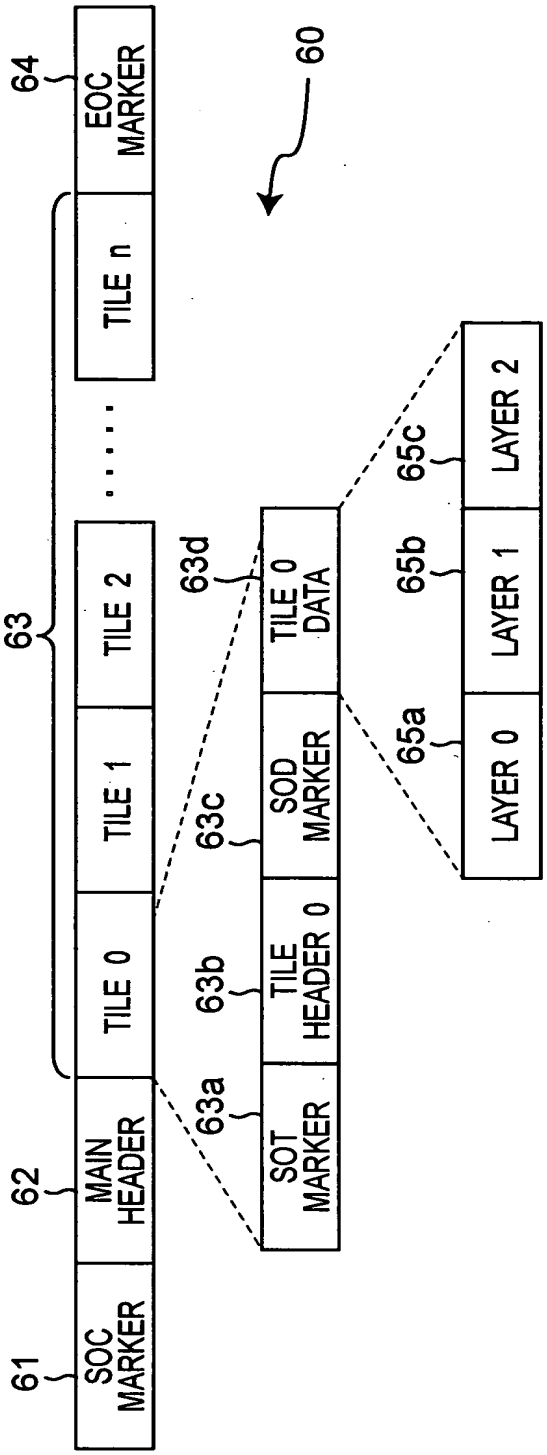


Fig.15B

Fig.16

MARKER COLOR	DESTINATION
RED	A
YELLOW	B
BLUE	C
⋮	⋮

Fig.17

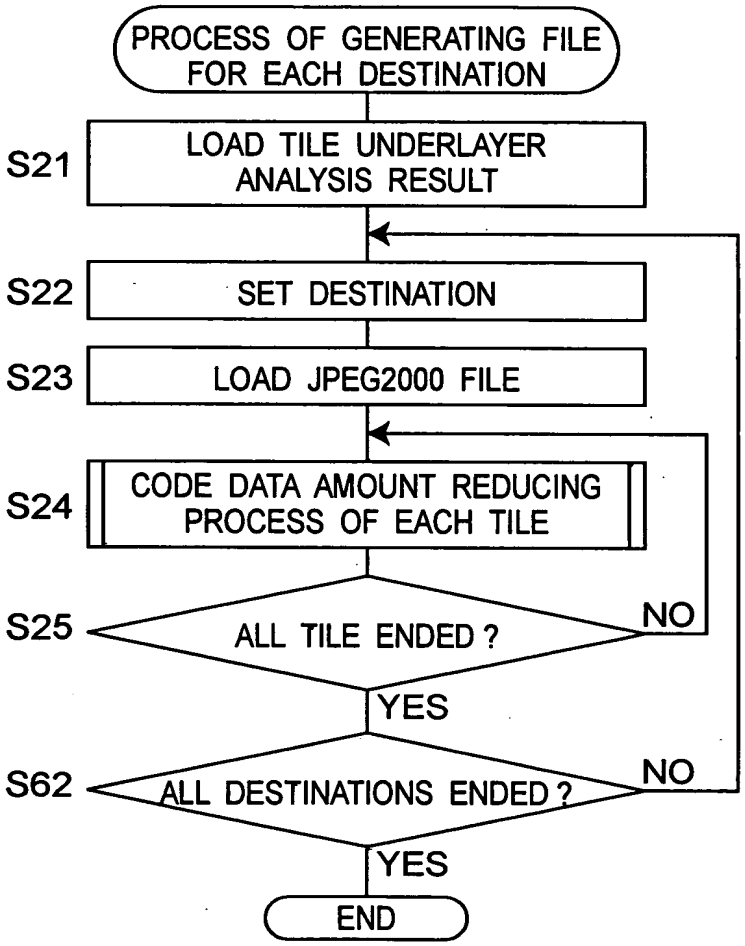


Fig.18

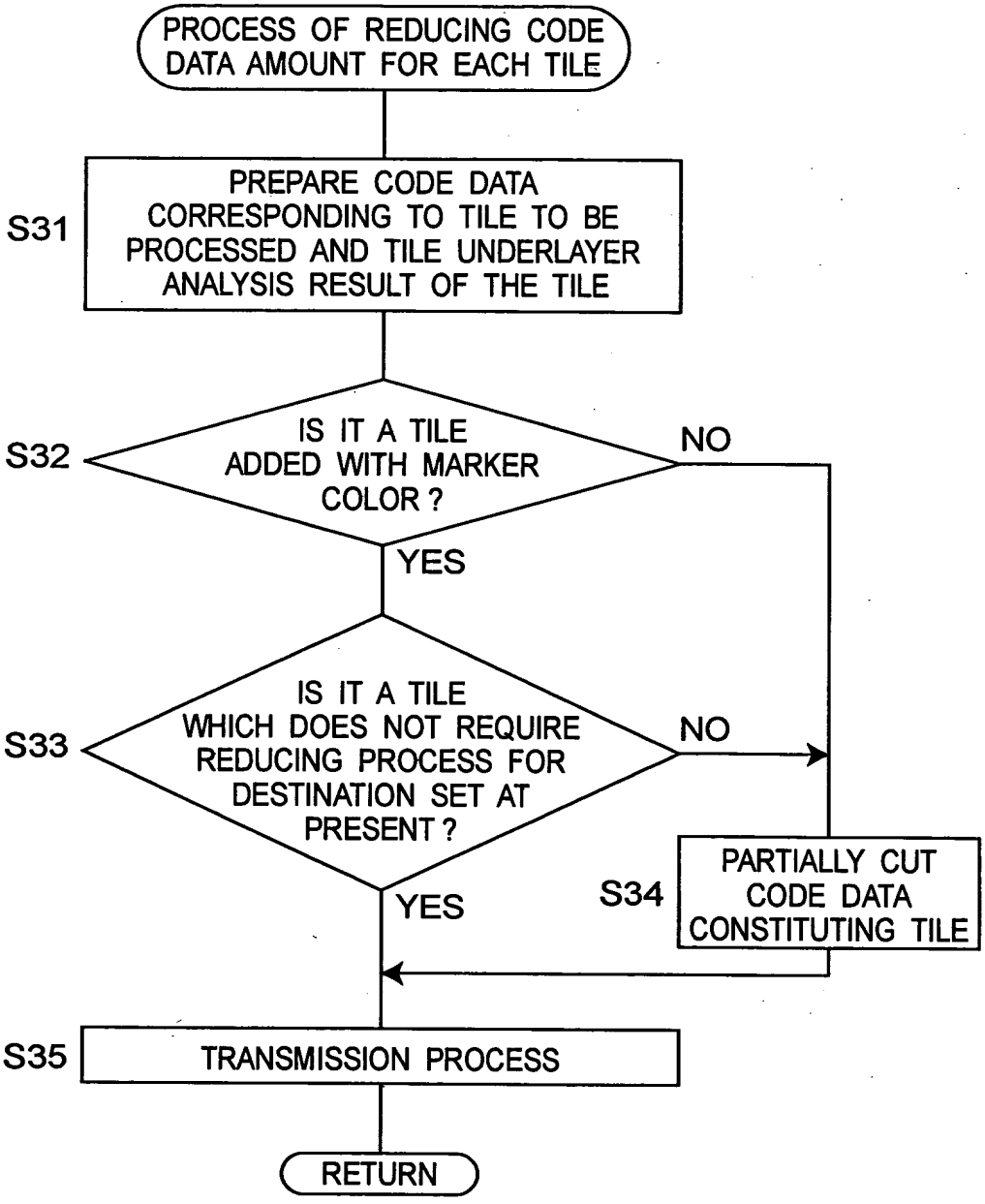

PROCESS OF REDUCING CODE DATA AMOUNT FOR EACH TILE
S31
PREPARE CODE DATA CORRESPONDING TO TILE TO BE PROCESSED AND TILE UNDERLAYER ANALYSIS RESULT OF THE TILE
S32
IS IT A TILE ADDED WITH MARKER COLOR ?
NO
YES
S33
IS IT A TILE WHICH DOES NOT REQUIRE REDUCING PROCESS FOR DESTINATION SET AT PRESENT ?
NO
YES
S34
PARTIALLY CUT CODE DATA CONSTITUTING TILE
S35
TRANSMISSION PROCESS
RETURN

Fig.19

MARKER COLOR	DESTINATION	CUTOFF LEVEL
RED	A	0
YELLOW	A	1
YELLOW	B	0
BLUE	B	2
⋮	⋮	⋮